

U.S. Patent Appln. Serial No.: 09/830,560
Atty. Docket No.: 206253US-3 PCT
Reply to Office Action of April 17, 2003

This listing of claims will replace all prior versions, and listings of claims in the Application.

Listing of Claims:

Claims 1-38 (Canceled).

Claim 39 (currently amended): A massaging apparatus comprising:

a supporting arm having a therapeutic member, the supporting arm being pivotally supported on the massaging apparatus and the supporting arm being movable along a body of a user, ~~wherein; and~~

a sensor configured to detect a position of a specific portion of the user with respect to the massaging apparatus ~~is determined from~~ by determining a ~~relation~~ relationship between a vertical position of the supporting arm and a pivotal position of the supporting arm.

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Claim 40 (currently amended): A massaging apparatus comprising:

a supporting arm having a therapeutic member, the supporting arm being pivotally supported on the massaging apparatus and the supporting arm being movable along a body of a user; and

a pivotal-position-detecting sensor ~~for detecting~~ configured to detect that the supporting arm has reached a prescribed range of pivotal ~~movement~~ positions.

Claim 41 (currently amended): A massaging apparatus comprising:

a supporting arm having a therapeutic member, the supporting arm being pivotally supported on the massaging apparatus and the supporting arm being movable along a body of a user; and

a pivotal-position-detecting sensor means for detecting a prescribed range of pivotal ~~position~~ positions of the supporting arm.

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Claim 42 (currently amended): A massaging apparatus comprising:

a supporting arm having a therapeutic member, the supporting arm being pivotally supported on the massaging apparatus and the supporting arm being movable along a body of a user, wherein; and

a sensor configured to detect a position of a specific portion of the body of the user with respect to the massaging apparatus ~~is determined from~~ by determining a vertical position of the supporting arm at a moment when a pivotal position of the supporting arm has reached a prescribed range.

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Claim 43 (previously presented): The massaging apparatus as set forth in claim 40, wherein the pivotal-position-detecting sensor comprises an optical sensor having a light emitting element and a light receiving element, and whether or not the supporting arm has reached the prescribed range of pivotal movement is detected by determining if light from the light emitting element has been received by the light receiving element.

Claim 44 (withdrawn): A massaging apparatus as set forth in Claim 40, wherein the pivotal-position-detecting sensor comprises a limit switch, and the fact that the supporting arm reached the prescribed range of pivotal movement is detected by switching of the limit switch between ON and OFF.

Claim 45 (withdrawn): A massaging apparatus as set forth in Claim 40, wherein the pivotal-position-detecting sensor comprises a lead switch, and the lead switch is switched between ON and OFF by a change of a magnetic field at the moment when the supporting arm has reached the prescribed range of pivotal movement.

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Claim 46 (withdrawn): A massaging apparatus as set forth in Claim 41, wherein the pivotal-position-detecting sensor comprises a variable resistor or an encoder of which an output varies according to the pivotal position of the supporting arm.

Claim 47 (withdrawn): A massaging apparatus as set forth in Claim 41, wherein the pivotal-position-detecting sensor comprises a magnetoelectric converting element, and an output of the magnetoelectric converting element varies with a variation in magnetic field due to the pivotal position of the supporting arm.

Claim 48 (currently amended): The massaging apparatus as set forth in claim 39, wherein the sensor configured to detect the position of the specific portion of the body of the user to be determined is detects a position of a shoulder of the body of the user.

Claim 49 (currently amended): The massaging apparatus as set forth in claim 42, wherein the sensor configured to detect the position of the specific portion of the body of the user to be determined is detects a position of a shoulder of the body of the user.

Claim 50 (previously presented): The massaging apparatus as set forth in claim 40, further comprising a second supporting arm and a second pivotal-position-detecting sensor, wherein the supporting arm and the second supporting arm constitute a pair of left and right supporting arms, and wherein the pivotal-position-detecting sensor is associated with the supporting arm and the second pivotal-position-detecting sensor is associated with the second supporting arm.

Claim 51 (previously presented): The massaging apparatus as set forth in claim 41, further comprising a second supporting arm and a second pivotal-position-detecting sensor, wherein the supporting arm and the second supporting arm constitute a pair of left and right

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supporting arms, and wherein the pivotal-position-detecting sensor is associated with the supporting arm and the second pivotal-position-detecting sensor is associated with the second supporting arm.

Claim 52 (withdrawn): A massaging apparatus comprising a therapeutic member for massaging a user's body provided so as to move freely along the user's body in a vertical direction, and a position detecting means for detecting a position of a specific portion of the body so that a detected value obtained by the position detecting means in a process of movement of the therapeutic member from a lower position to an upper position of the specific portion is recognized as the position of the specific portion of the body.

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Claim 53 (withdrawn): A massaging apparatus as set forth in Claim 52, wherein the detected value obtained by the position detecting means in the process of reverse and upward movement of the therapeutic member after being moved downward to a position lower than the specific portion of the body once is recognized as the position of the specific portion of the body.

Claim 54 (withdrawn): A massaging apparatus as set forth in Claim 52, wherein a first value detected by the position detecting means in a process of downward movement of the therapeutic member from the upper position of the specific portion of the body and a second value detected by the position detecting means in a process of upward movement thereof from the lower position of the specific portion of the body are compared, and when the first and second values are in close agreement with each other, the second value is recognized as the position of the specific portion of the body.

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Claim 55 (withdrawn): A massaging apparatus as set forth in Claim 52, wherein the therapeutic member moves upward a plurality of times and the position of the specific portion is detected by the position detecting means in the process of upward movement, and when detected values are in close agreement with each other, the value obtained by a final detection is recognized as the position of the specific portion of the body.

Claim 56 (withdrawn): A massaging apparatus comprising a therapeutic member for massaging a user's body provided so as to move along the user's body, wherein the therapeutic member is provided by a supporting body projecting toward the user, and a detector for directly detecting a shoulder of the user is provided on a position of the supporting body behind the therapeutic member.

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Claim 57 (withdrawn): A massaging apparatus comprising a therapeutic member for massaging the user's body provided so as to move along the body as set forth in Claim 56, wherein the therapeutic member is mounted via a supporting body projecting toward the user, the supporting member is provided with a pair of supporting portions on which there is provided the therapeutic member respectively, there is provided between the supporting portions a space opening toward the user and configured to receive the user's shoulder, and the supporting body is provided with a detector for directly detecting the shoulder of the user within the space as a range of detection.

Claim 58 (withdrawn): A massaging apparatus as set forth in Claim 56, wherein the detector is constructed of a micro switch that is turned ON and OFF when it comes into contact with the user's shoulder.

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Claim 59 (withdrawn): A massaging apparatus as set forth in Claim 57, wherein the detector is constructed of a micro switch that is turned ON and OFF when it comes into contact with the user's shoulder.

Claim 60 (withdrawn): A massaging apparatus as set forth in Claim 56, wherein said detector is constructed of a pressure sensor for detecting a load applied by the shoulder when it comes into contact with the user's shoulder.

Claim 61 (withdrawn): A massaging apparatus as set forth in Claim 57, wherein said detector is constructed of a pressure sensor for detecting a load applied by the shoulder when it comes into contact with the user's shoulder.

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Claim 62 (withdrawn): A massaging apparatus comprising a massaging unit having a therapeutic member for performing massaging motion provided so as to move along a user's body, and equipment to be arranged on a specific portion of the user's body so that a position of the equipment with respect to the massaging apparatus is detected to determine a position of the specific portion of the user with respect to the massaging apparatus.

Claim 63 (withdrawn): A massaging apparatus comprising a massaging unit having a therapeutic member for performing massaging motion provided so as to move along a user's body, equipment to be arranged on a specific portion of the user's body, and detecting means for detecting a position of the equipment with respect to the massaging apparatus so that a position of the specific portion of the user with respect to the massaging apparatus is determined from the position of the equipment with respect to the massaging apparatus detected by the detecting means.

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Claim 64 (withdrawn): A massaging apparatus comprising a massaging unit having a therapeutic member for performing massaging motion provided so as to move along a user's body, and detecting means between equipment of the massaging apparatus to be arranged at a specific portion of the user's body and the massaging unit for detecting that the equipment and the massaging apparatus are approaching each other, so that a position of the specific portion of the user with respect to the massaging apparatus is determined from a position of the massaging unit at a moment when the approach of the equipment and the massaging unit are detected by the detecting means.

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Claim 65 (withdrawn): A massaging apparatus as set forth in Claim 63, wherein the detecting means comprises a magnetic body mounted on one of the equipment and the massaging unit, and a magnetic sensor mounted on the other one of them.

Claim 66 (withdrawn): A massaging apparatus as set forth in Claim 64, wherein the detecting means comprises a magnetic body mounted on one of the equipment and the massaging unit, and a magnetic sensor mounted on the other one of them.

Claim 67 (withdrawn): A massaging apparatus as set forth in Claim 63, wherein the equipment of the massaging apparatus comprises a pillow of the massaging apparatus having a seatback portion, and the pillow is mounted on a front surface of the seatback portion so as to be adjustable in upward and downward directions, so that the position of the specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the pillow arranged at the user's head.

Claim 68 (withdrawn): A massaging apparatus as set forth in Claim 64, wherein the equipment of the massaging apparatus comprises a pillow of the massaging apparatus having

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a seatback portion, and the pillow is mounted on a front surface of the seatback portion so as to be adjustable in upward and downward directions, so that the position of the specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the pillow arranged at the user's head.

Claim 69 (withdrawn): A massaging apparatus as set forth in Claim 63, wherein the equipment of the massaging apparatus comprises a remote controller for controlling the massaging apparatus, and a position of the specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the remote controller with respect to the massaging apparatus when the user arranges the remote controller at the specific portion of the user.

Claim 70 (withdrawn): A massaging apparatus as set forth in Claim 64, wherein the equipment of the massaging apparatus comprises a remote controller for controlling the massaging apparatus, and a position of the specific portion of the user with respect to the massaging apparatus is determined by detecting a position of the remote controller with respect to the massaging apparatus when the user arranges the remote controller at the specific portion of the user.

Claim 71 (withdrawn): A massaging apparatus as set forth in Claim 62, wherein a position of a shoulder with respect to the massaging apparatus is determined as a position of the specific portion of the user.

Claim 72 (withdrawn): A massaging apparatus as set forth in Claim 63, wherein a position of a shoulder with respect to the massaging apparatus is determined as a position of the specific portion of the user.

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Claim 73 (withdrawn): A massaging apparatus as set forth in Claim 64, wherein a position of a shoulder with respect to the massaging apparatus is determined as a position of the specific portion of the user.

Claim 74 (withdrawn): A massaging apparatus comprising a main body of the massaging apparatus, a therapeutic member provided on the body of the massaging apparatus so as to move along a user's body in a vertical direction for giving a massage to the user, a position control element for positioning the therapeutic member manually to arbitrary positions, and a memory for storing the position of the therapeutic member determined by the manual operation of the position control element as a reference position.

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Claim 75 (withdrawn): A massaging apparatus comprising a main body of the massaging apparatus, a positioning body provided on the main body of the massaging apparatus so as to move along a user's body in a vertical direction, a position control element for manually positioning the positioning body at arbitrary positions, and a memory for storing the position of the positioning body determined by the manual operation of the position control element as a reference position.

Claim 76 (withdrawn): A massaging apparatus comprising a positioning body provided on the main body of the massaging apparatus so as to move along a user's body in a vertical direction, of which the movement is controlled by instructions from a control element, and a reference-position-determining control element for performing determination of the reference position for the positioning body, and wherein the control element detects a position of the positioning body at a moment when the reference-position-determining control element is operated as a reference position.

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Claim 77 (withdrawn): A massaging apparatus as set forth in Claim 74, wherein the reference position is a shoulder position.

Claim 78 (withdrawn): A massaging apparatus as set forth in Claim 75, wherein the reference position is a shoulder position.

Claim 79 (withdrawn): A massaging apparatus as set forth in Claim 76, wherein the reference position is a shoulder position.

Claim 80 (withdrawn): A massaging apparatus comprising a massaging member, a message drive including an air cell that is inflated to advance the massaging member toward a user and is deflated to retract the massaging member from the user, the message drive being constructed to move along a user's body, and detecting means for detecting inflation and deflation of the air cell.

Claim 81 (withdrawn): A massaging apparatus as set forth in Claim 80, wherein a base portion that advances toward and retracts from the user according to inflation and deflation of the air cell is provided, and a massaging member is mounted on the base portion, so that the detecting means detects movement of the base portion.

Claim 82 (withdrawn): A massaging apparatus as set forth in Claim 80, wherein the detecting means is a limit switch that is turned ON and OFF according to inflation and deflation of the air cell.

Claim 83 (withdrawn): A massaging apparatus as set forth in Claim 81, wherein the detecting means is a limit switch that is turned ON and OFF according to inflation and deflation of the air cell.

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Claim 84 (withdrawn): A massaging apparatus comprising a therapeutic member for massaging a user's body, a supporting body for supporting the therapeutic member by a supporting shaft, a detector for detecting a load in an axial direction applied to the therapeutic member provided between the supporting body and the therapeutic member in the axial direction of the supporting shaft.

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Claim 85 (withdrawn): A massaging apparatus comprising a therapeutic member for massaging a user's body provided so as to move freely along the user's body in a vertical direction, and a detector for detecting a load applied to the therapeutic member in the lateral direction, and wherein the load applied to the therapeutic member from the body in a lateral direction is detected by the detector while moving the therapeutic member in the vertical direction, and a position of a specific portion of the body in the vertical direction is determined based on the detection.

Claim 86 (withdrawn): A massaging apparatus as set forth in Claim 85, wherein a supporting body for supporting the therapeutic member by the supporting shaft having a lateral axis is provided, and the detector is provided between the supporting body and the therapeutic member in a direction of the axis of the supporting shaft.

Claim 87 (withdrawn): A massaging apparatus as set forth in Claim 84, wherein the therapeutic member is mounted rotatably about the axis of the supporting shaft, and the detector is provided on a side of the supporting body with movement about the axis of the supporting shaft restrained.

Claim 88 (withdrawn): A massaging apparatus as set forth in Claim 85, wherein the therapeutic member is mounted rotatably about the axis of the supporting shaft, and the

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detector is provided on a side of the supporting body with movement about the axis of the supporting shaft restrained.

Claim 89 (withdrawn): A massaging apparatus as set forth in Claim 86, wherein the therapeutic member is mounted rotatably about the axis of the supporting shaft, and the detector is provided on a side of the supporting body with movement about the axis of the supporting shaft restrained.

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Claim 90 (withdrawn): A massaging apparatus as set forth in Claim 84, wherein the detector is provided with a pre-load applied.

Claim 91 (withdrawn): A massaging apparatus as set forth in Claim 85, wherein the detector is provided with a pre-load applied.

Claim 92 (withdrawn): A massaging apparatus as set forth in Claim 86, wherein the detector is provided with a pre-load applied.

Claim 93 (withdrawn): A massaging apparatus as set forth in Claim 87, wherein the detector is provided with a pre-load applied.
